**REMARKS**

The Office Action dated May 20, 2009 has been reviewed carefully and the application has been amended in sincere effort to place it in condition for allowance. All objections and rejections are respectfully traversed.

Claims 30 – 49 are pending in the application. New Claim 49 has been added to better claim the invention. Support for Claim 49 can be found in the originally filed description at Page 13, lines 8 – 12, and lines 23 – 27 and in other parts of the application.

*Claim Rejections – 35 U.S.C. §112*

Claim 45 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicant has amended Claim 45 to recite "the first interface means is connected to the first communication network." This is supported in the original description at Page 6, lines 13 - 14.

*Claim Rejections - 35 U.S.C. §103*

Claims 30-48 were rejected under 35 U.S.C. §103 (a) as being unpatentable over U.S. Patent No. 6,453,687 to Sharood, et al. ("Sharood") in view of U.S. Patent Application Publication No. 2002/0124081 to Primm et al. ("Primm").

Applicant's invention relates to a monitoring device for one or more electrical appliances. The monitoring device of the present invention monitors not only external electrical quantities (such as voltage, power and the like), but also examines at least one physical quantity relating to the operation of the device, such as, for a washing machine, weight of the textile items being in the basket of the washing machine, flow rate of the

water in the machine and conductivity of the water that is drained from the washing

machine. As stated in the Specification:

> [T]he monitored electric appliance is a laundry washing machine or
> washing/drying machine adapted to perform at least one wash
> treatment on textile items. At least one sensing device is associated
> with the washing machine, preferably being capable of detecting at
> least one physical quantity among the following: weight of the
> textile items being present in the basket of the washing machine or
> washing/drying machine, flow rate of the water supplied to the
> washing machine or washing/drying machine, temperature of the
> washing liquid contained in the tub of the washing machine or
> washing/drying machine, and conductivity of the washing liquid
> drained by the washing machine or washing/drying machine, said
> washing liquid comprising water and at least one washing agent.

Specification, Page 14, lines 9 – 18. The present invention consists of employing

a monitoring device which, in order to analyze the operation and state of the monitored

electrical appliance, uses not only "external" electric quantities, but also other physical

quantities (being measured directly) related to the electric appliance and sent by suitable

sensing devices.

> [B]y way of a non-limiting example, the quantity X(t) is the power
> absorbed by the washing machine 1, when a wash treatment is
> started there will be an additional draw of electric power by the
> electric resistance used for warming up the washing liquid employed
> for the treatment (the electric resistance dissipates a thermal power
> of approx. 2kW). If the monitoring device 9 does not detect said
> additional electric power absorbed, it will realize that a fault has
> occurred in the electric resistance or in the electric circuit which
> should active the electric resistance.

Specification, Page 11, lines 4 – 10.

In other words, the microcontroller verifies the existence, at a particular time

instant t*, of a combination of values of physical and/or electric quantities being

significantly different from (based on the evaluation logic in the microcontroller 30) from

the particular combination of values of the same physical and/or electric quantities

contained in the non-volatile memory 31. Such values represent the reference

combination of physical and/or electric quantities, i.e., the combination that best

represents the proper operation of the washing machine 1 at the time instant t*. *See*:

Specification Page 11, lines 12 – 18. For example, the microcontroller may determine

that a washing machine is in a rinse cycle, and a particular combination of physical or

electrical quantities that are sensed during an actual rinse cycle are compared to such a

combination that are stored as the predefined values. If there is a discrepancy it is then

determined that there may be a malfunction and further steps are to be taken.

Sharood does not include a memory in which predefined values for aspects of the

operation of the appliance are stored. It does not include a set of sensors for measuring

actual quantities during the operation of a specific cycle or state of the washing machine

in operation. Further, Sharood does not teach a monitoring device that determines from

the stored predefined values and measured values at least one piece of information related

to the monitored electrical appliance.

Sharood's retrofit plug is limited to detecting an electrical quantity or

temperature. It has no way of determining and comparing functional information, i.e.,

concerning the operating state of the monitored appliance, or statistical information, i.e.,

concerning the usage of the monitored electrical appliance, or diagnostic information, i.e.,

concerning the efficiency condition of the monitored electrical appliance. Page 7, lines

19 – 24.

In accordance with a further aspect of the invention, the timing unit together with the non-volatile memory allows the system to trace the history of the monitored electrical appliance, in that it permits building, in the non-volatile memory, profiles being indicative of the trend within a predetermined time period of a particular physical quantity or typology of information obtained by the microcontroller. Such data is gathered substantially continuously.

In contrast, Sharood describes a refrigerator monitoring unit that is a retrofit plug being a "plug-through device that is either attached in line with the main appliance electrical supply or internally in line with a main control board interface connector of an appliance." (Col. 8, lines 14 – 17). As illustrated in Fig. 26B of Sharood, the compartment 2610 is within the appliance and it sends data that it sensed to the retrofit plug 2650. The retrofit plug can determine that, for example, the refrigerator has reached a predetermined temperature, and if so, the retrofit plug 2650 can perform certain tasks such as alerting an operator.

This retrofit plug can be used to alert the user that the power is out and how long until food spoilage will occur. Col. 27, lines 51- 53, and lines 55 – 58. However, the Sharood reference does not teach that predefined values are used for comparison with the detected data to compute at least one piece of information about the appliance. The Sharood reference does not teach *a storage means containing one or more predefined values of the at least one physical quantity,* as claimed by Applicant. Furthermore, Sharood does not disclose, teach or suggest Applicant's claimed feature of a *microcontroller to process measurements of the at least one physical quantity and the*

*at least one electric quantity to determine at least one piece of information by*

*comparing the value of the at least one physical quantity with one or more predefined*

*values relating to the operation of the household electric appliance.*

Specifically, in Applicant's claimed invention, multiple sensors 93, 94, 95 and 96

(Fig. 1) that are disposed within the appliance, and on the exterior of the appliance.

Storage means 31 (Fig. 2) includes pre-defined values for comparison with actual values

directly measured by the sensors during operation. There is no need, in Applicant's

claimed invention, to retrofit or otherwise impact the integrity of the appliance because

information is transmitted from the sensing devices 93, 94, 95 and 96 to the first interface

means 70A, 70B which sends the information to the monitoring device 9. (Fig. 1) The

microcontroller receives the sensed data and determines at least one piece of information

which may be functional, statistical or diagnostic information. The Sharood retrofit plug

does not operate in this manner and does not disclose, teach or suggest key features of

Applicant's invention. Thus, Sharood does not alone render Applicant's invention

obvious.

Primm describes a remote monitoring service for a computer system that includes

a computer room or a server room. In particular, Primm indicates that "A typical

computer room can house hundreds of devices ranging from expensive server grade

computers to bridges, routers, uninterruptible power supplies and telephone equipment."

Page 1, Paragraph 10. The network appliances specified by Primm are computers used to

monitor environmental and other conditions such as in a computer room or otherwise in

the computer system. Paragraph 58. Moreover, Paragraph 23 of Primm states in part:

"Another aspect of the invention may be found in a cluster of network-enabled appliances. The cluster of network-enabled appliances may establish peer-to peer relationships."

Thus, Primm is unrelated to the field of household appliances. Even so, Primm still does not teach directly sensing information about an appliance and comparing the sensed data to predefined values that are stored in an associated non-volatile memory 31 (Fig. 2) as taught and claimed by Applicant. Primm specifies a network enabled device that operates to establish a peer-to-peer relationship. The network appliance can be programmed to sense a condition of the device. If the value reaches a stored threshold valued, then a notification is sent. This does not disclose teach or suggest solutions regarding household appliances whereby a combination of physical and electrical quantities are sensed in a particular state or operation of the appliance. The data thereby collected is compared with predefined values for that particular instance, state or operation of the appliance from which a piece of information is determined. Applicant's microcontroller develops information that is functional, statistical or diagnostic for that appliance.

More particularly, Primm does not disclose, teach or suggest *a storage means containing one or more predefined values of the at least one physical quantity,* as claimed by Applicant. Furthermore, Primm does not disclose, teach or suggest Applicant's claimed features of a *microcontroller to process measurements of the one or more physical quantities and the at least one electric quantity to determine at least one piece of information by comparing the value of the at least one physical quantity with*

*one or more predefined values relating to the operation of the household electric appliance.*

Further, the combination of Sharood's retrofit plug with Primm's network appliances does not render Applicant's invention obvious because Sharood's plug combined with Primm's network appliance does not teach sensing of physical and electrical quantities and comparing such quantities with predefined values, and determining at least one piece of information about the appliance. Because neither reference alone or in combination teaches Applicant's claimed features, then Applicant's invention as claimed in the independent claims is patentable over the cited references.

In order to enhance the claims and to further clarify the distinctions that Applicant's invention has over the cited art, the independent claims have been amended herein. It is respectfully submitted that the independent claims are in condition for allowance.

Furthermore, as all independent claims are believed to be in condition for allowance, all dependent claims are thus dependent from independent claims which are believed to be in condition for allowance. Accordingly, all dependent claims are believed to be in condition for allowance.

Favorable action is respectfully solicited.

Please do not hesitate to contact the undersigned in order to advance the prosecution of this application in any respect.

Please charge any additional fee occasioned by this paper to our Deposit Account

No. 03-1237.

Respectfully submitted,


  /Rita M. Rooney/
Rita M. Rooney
Reg. No. 30,585
CESARI AND MCKENNA, LLP
88 BLACK FALCON AVENUE
BOSTON, MA  02210
Telephone:  (617) 951-2500
Facsimile:  (617) 951-3927